

This listing of claims will replace the originally filed claims in the application.

Listing of Claims

Claims 1 – 10 (canceled).

Claim 11 (new): An emissive electrode insert formed from an alloy comprising hafnium and zirconium.

Claim 12 (new): The insert of claim 11, wherein said alloy comprises at least about 80% hafnium by weight.

Claim 13 (new): The insert of claim 12, wherein said alloy comprises at least about 90% hafnium by weight.

Claim 14 (new): The insert of claim 11, wherein said alloy comprises between about 0.1% and about 8% zirconium by weight.

Claim 15 (new): The insert of claim 14, wherein said alloy comprises between about 0.5% and about 5% zirconium by weight.

Claim 16 (new): The insert of claim 11, wherein said alloy comprises between about 96% and about 99% hafnium by weight and between about 0.5% and about 3.5% zirconium by weight.

Claim 17 (new): The insert of claim 11, wherein said alloy comprises between about 98.08% and about 98.20% hafnium by weight and between about 1.70% and about 1.82% zirconium by weight.

Claim 18 (new): The insert of claim 11, wherein said insert is of cylindrical shape.

Claim 19 (new): The insert of claim 11, wherein said insert has a length of between about 3 mm and about 8 mm, and a diameter of between about 1 mm and about 4 mm.

Claim 20 (new): A plasma torch electrode comprising:

- an electrode body comprising a cavity; and
- an emissive electrode insert comprising hafnium and zirconium,

wherein said insert is fitted into the cavity of said electrode body.

Claim 21 (new): The plasma torch electrode of claim 20, wherein said insert comprises copper.

Claim 22 (new): The plasma torch electrode of claim 21, wherein said insert comprises a copper alloy.

Claim 23 (new): A plasma torch comprising the plasma torch electrode of claim 20.

Claim 24 (new): The plasma torch of claim 23, wherein said insert comprises copper.

Claim 25 (new): The plasma torch of claim 24, wherein said insert comprises a copper alloy.

Claim 26 (new): The plasma torch of claim 23, wherein said plasma torch comprises a plasma cutting torch.

Claim 27 (new): The plasma cutting process for cutting a steel workpiece in which said plasma torch of claim 23 is employed.

Claim 28 (new): A process for cutting a steel workpiece comprising using a plasma cutting torch wherein the electrode comprises an emissive electrode insert which comprises from about 96% up to about 99% hafnium by weight and from about 0.5% up to about 3.5% zirconium by weight.

Claim 29 (new): The process of claim 28 wherein said insert comprises from about 98.08% up to about 98.20% hafnium by weight and from about 1.70% up to

about 1.82% zirconium by weight, of cylindrical shape, has a length of from about 3 mm up to about 8 mm, and a diameter of from about 1 mm up to about 4 mm.